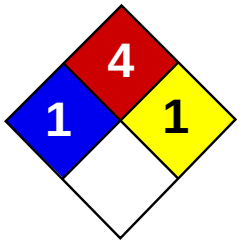

Health	2
Fire	4
Reactivity	0
Personal Protection	H

Material Safety Data Sheet
Ethyl ether MSDS

Section 1: Chemical Product and Company Identification

Product Name: Ethyl ether

Catalog Codes: SLE2170, SLE1783, SLE1465

CAS#: 60-29-7

RTECS: KI5775000

TSCA: TSCA 8(b) inventory: Ethyl ether

CI#: Not available.

Synonym: Diethyl Ether; Ether

Chemical Name: Ethyl Ether

Chemical Formula: C4H10O

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Ethyl ether	60-29-7	100

Toxicological Data on Ingredients: Ethyl ether: ORAL (LD50): Acute: 1215 mg/kg [Rat]. VAPOR (LC50): Acute: 73000 ppm 2 hours [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to skin, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 180°C (356°F)

Flash Points: CLOSED CUP: -45°C (-49°F).

Flammable Limits: LOWER: 1.9% UPPER: 36%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances:
Extremely flammable in presence of open flames and sparks, of heat. Slightly flammable to flammable in presence of oxidizing materials, of acids.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Highly explosive in presence of open flames and sparks, of heat. Slightly explosive in presence of oxidizing materials.

Fire Fighting Media and Instructions:
Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards:
Highly flammable. Will be easily ignited by heat, sparks, and flames. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. Burns with smokey greenish flame. Violent reaction or ignition on contact with halogens (e.g., bromine, chlorine), interhalogens (e.g., iodine heptafluoride), oxidants (e.g., silver perchlorate, nitrosyl perchlorate, nitryl perchlorate, chromyl chloride, fluorine nitrate, permanganic acid, nitric acid, hydrogen peroxide, peroxodisulfuric acid, iodine (VII) oxide, sodium peroxide, ozone, and liquid air), sulfur and sulfur compounds (e.g., sulfur when dried with peroxidized ether, sulfuryl chloride).

Special Remarks on Explosion Hazards:
Vapors may form explosive mixtures with air. Vapor explosion hazard indoors, outdoors, or in sewers. Run off to sewer may create a fire or explosion hazard. Containers may explode when heated. Tends to form explosive peroxides under influence of light and air and evaporated to dryness. Explosive reaction with boron triazide, bromine trifluoride, bromine pentafluoride,

perchloric acid, uranyl nitrate + light, wood pulp extracts + heat. Only electrical equipment of explosion proof type (group C classification) is permitted to be operated in ether areas. May explode when brought in contact with anhydrous nitric acid.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill:
Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids, moisture.

Storage:
Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Do not store above 30°C (86°F). Hygroscopic; keep container tightly closed. Air Sensitive Sensitive to light.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 400 (ppm) from OSHA (PEL) [United States] TWA: 400 STEL: 500 CEIL: 500 (ppm) from ACGIH (TLV) [United States] TWA: 1200 STEL: 1520 CEIL: 1500 (mg/m3) from ACGIH (TLV) [United States] STEL: 500 (ppm) [Australia] TWA: 1200 (mg/m3) from OSHA (PEL) [United States] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid. (volatile, mobile liquid)

Odor: Sweetish. Pungent. Ethereal.

Taste: Burning. Sweet.

Molecular Weight: 74.12g/mole

Color: Clear Colorless.

pH (1% soln/water): Not available.

Boiling Point: 34.6°C (94.3°F)

Melting Point: -116.3°C (-177.3°F)

Critical Temperature: 192.7°C (378.9°F)

Specific Gravity: 0.7134 (Water = 1)

Vapor Pressure: 58.6 kPa (@ 20°C)

Vapor Density: 2.56 (Air = 1)

Volatility: Not available.

Odor Threshold: 0.83 ppm

Water/Oil Dist. Coeff.: The product is more soluble in oil; log(oil/water) = 0.9

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, acetone.

Solubility:
Soluble in acetone. Partially soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, ignition sources, incompatible materials, light, air.

Incompatibility with various substances: Highly reactive with oxidizing agents, acids.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Air and light sensitive. Hygroscopic. Also incompatiable with bromoazide, chlorine, chlorine trifluoride, chromic anhydride, chromyl chloride, lithium aluminum hydride, nitrosyl perchlorate, nitryl perchlorate, ozone, perchloric acid, permanganated, sulfuric acid, potassium peroxide, sodium peroxide, triethyl aluminum trimethyl aluminum, bromine, iodine heptaflluoride, silver perchlorate, fluorine nitrate, permanganic acid, nitric acid, hydrogen peroxide, peroxodisulfuric acid, iodine (VII) oxide, peat soils, thiotriazyl perchlorate, sulfonyl chloride, sulfur, uranyl nitrate, acetyl peroxide, and wood pulp extracts. Can react vigorously with acetyl peroxide, air, bromoazide, ClF3, CrO3, Cr(OCl)2, LiAlH2, NOClO4, O2, NClO2, (H2SO4 + permanganates), K2O2, [(C2H5)3Al + air], [(CH3)3Al + air].

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact. Inhalation.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 1215 mg/kg [Rat]. Acute toxicity of the vapor (LC50): 31000 0.5 hours [Mouse].

Chronic Effects on Humans:
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May cause damage to the following organs: skin, central nervous system (CNS).

Other Toxic Effects on Humans:

Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals:
LD50 [Rabbit] -Route: Skin; Dose: >20 ml/kg LDL[Man] - Route: Oral; Dose: 260 mg/kg

Special Remarks on Chronic Effects on Humans: May affect genetic material (mutagenic) based on animal data.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Causes skin irritation. It is not appreciably absorbed through intact skin. Eyes: Causes eye irritation. Can cause slight , reversible eye injury from contact with liquid or vapor. Inhalation: It is rapidly absorbed through lungs. Vapor mist causes irritation of the respiratory tract and mucous membranes. Affects behavior, sense organs, peripheral and central nervous systems, liver and metabolism, cardiovascular system. Symptoms may include excitement, drowsiness, headache, nausea, vomiting, paleness, decreased pulse and temperature, irregular respiration, coughing, bronchodilation, increase in respiratory rate, increase in heart rate, excessive salivation, muscle relaxation, anesthetic effects, and possible kidney irritation or injury, and temporarily abnormal liver function tests. Ingestion: May be harmful if swallowed. May cause gastrointestinal tract irritation with nausea, vomiting

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation:
WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS EXPECTED TO QUICKLY EVAPORAT WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS EXPECTED TO LEACH INTO GROUNDWATER. WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS NOT EXPECTED TO BIODEGRADE. WHEN RELEASED INTO WATER, THIS MATERIAL IS NOT EXPECTED TO BIODEGRADE. WHEN RELEASED INTO THE WATER, THIS MATERIAL IS EXPECTED TO HAV HALF-LIFE OF LESS THAN 1 DAY. WHEN RELEASED TO WATER, THIS MATERIAL IS EXP TO QUICKLY EVAPORATE. THIS MATERIAL IS NOT EXPECTED TO SIGNIFICANTLY BIOACCUMULATE. THIS MATERIAL HAS A LOG OCTANOL-WATER PARTITION COEFFICIENT LESS THAN 3.0. WHEN RELEASED INTO THE AIR, THIS MATERIAL IS EXPECTED TO BE READILY DEGRADED BY REACTION WITH PHOTOCHEMICALLY PRODUCED HYDROXYL RADICA WHEN RELEASED INTO THE AIR, THIS MATERIAL IS NOT EXPECTED TO BE DEGRADED B PHOTOLYSIS. WHEN RELEASED INTO THE AIR, THIS MATERIAL IS EXPECTED TO HAVE HALF-LIFE BETWEEN 1 AND 10 DAYS.

Section 13: Disposal Considerations

Waste Disposal:
Consult with Local and Regional (State) authorities (waste regulators). Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 3: Flammable liquid.

Identification: : Diethyl ether UNNA: 1155 PG: I

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:

Connecticut hazardous material survey.: Ethyl ether Illinois toxic substances disclosure to employee act: Ethyl ether Illinois chemical safety act: Ethyl ether New York release reporting list: Ethyl ether Rhode Island RTK hazardous substances: Ethyl ether Pennsylvania RTK: Ethyl ether Florida: Ethyl ether Minnesota: Ethyl ether Massachusetts RTK: Ethyl ether Massachusetts spill list: Ethyl ether New Jersey: Ethyl ether New Jersey toxic catastrophe prevention act: Ethyl ether Louisiana spill reporting: Ethyl ether California Director's List of Hazardous Substances: Ethyl ether TSCA 8(b) inventory: Ethyl ether TSCA 4(a) proposed test rules: Ethyl ether TSCA 8(a) PAIR: Ethyl ether

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).

DSCL (EEC):
R12- Extremely flammable. R19- May form explosive peroxides. R22- Harmful if swallowed. S9- Keep container in a well-ventilated place. S16- Keep away from sources of ignition - No smoking. S29- Do not empty into drains. S33- Take precautionary measures against static discharges.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 4

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 4

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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